

POPULATION CALCULATION SHEET

Section of Springfield Township served by Wyoming

① Population of City (or Other Municipality)

1,800 People

Year 1980

② Area of City (Planimeter Reading)

5.74 Square Inches

US EPA RECORDS CENTER REGION 5

③ Population Density [① ÷ ②]

313.59 People per Square Inch



④ Average Persons per House (Census)

Year 1980

⑤ Area of City Within Radius (Planimeter Reading)

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
				4.46	
				1398.61	

⑥ Population of City Within Radius [⑤ x ③]

⑦ House Count Within Radius, Outside City

⑧ Population From House Count [⑦ x ④]

⑨ Total Population Within Radius [⑥ + ⑧]

ERROR CHECK:

⑩ Area of City Outside 4 miles

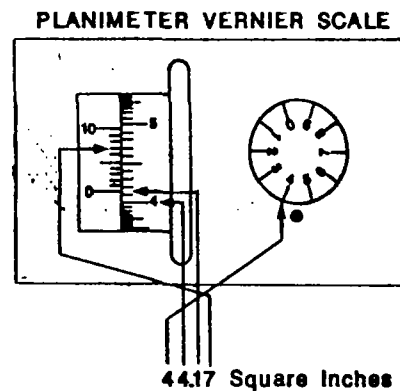
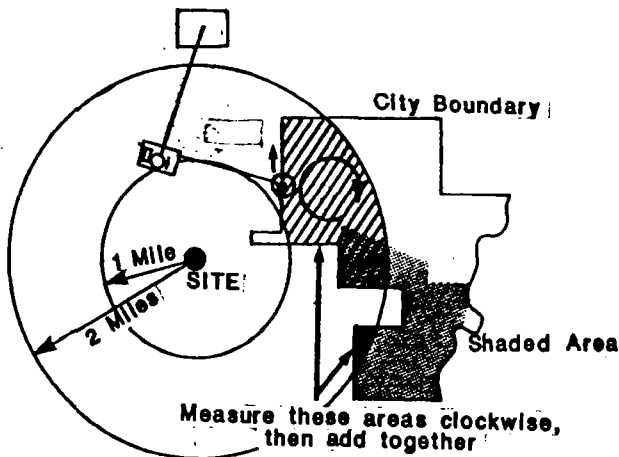
 Square Inches

⑪ Population of City Outside of 4 miles [⑩ x ③]

 People

⑫ Population of City [⑨ + ⑪]

 People 2 ⑫



POPULATION CALCULATION SHEET

Glendale, OH

① Population of City (or Other Municipality) _____

2,368

People

Year _____

② Area of City (Planimeter Reading) _____

11.55

Square Inches

③ Population Density [① ÷ ②] _____

205.02

People per Square Inch

④ Average Persons per House (Census) _____

Year _____

⑤ Area of City Within Radius (Planimeter Reading) _____

⑥ Population of City Within Radius [⑤ x ③] _____

⑦ House Count Within Radius, Outside City _____

⑧ Population From House Count [⑦ x ④] _____

⑨ Total Population Within Radius [⑥ + ⑧] _____

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
				8.83	
				180.33	

ERROR CHECK:

⑩ Area of City Outside 4 miles _____

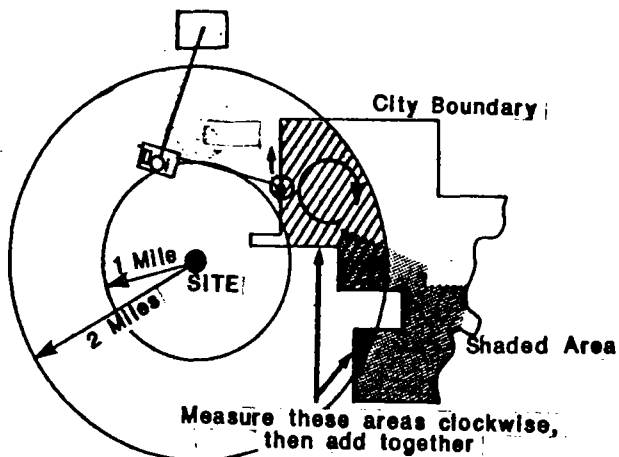
Square Inches

⑪ Population of City Outside of 4 miles [⑩ x ③] _____

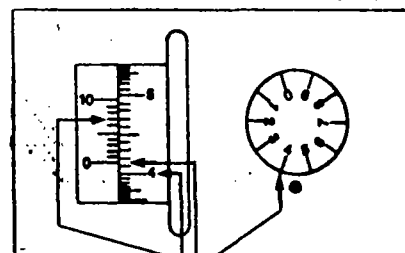
People

⑫ Population of City [⑨ + ⑪] _____

People \pm ①



PLANIMETER VERNIER SCALE



44.17 Square Inches

POPULATION CALCULATION SHEET Wyoming City.

① Population of City (or Other Municipality) _____

~~2,800~~ ~~1,000~~ ~~1,800~~
8,282 People / 7:15 am Year 80

② Area of City (Planimeter Reading) _____

18.44 Square Inches

③ Population Density [① ÷ ②] _____

449.13 People per Square Inch

④ Average Persons per House (Census) _____

Year _____

⑤ Area of City Within Radius (Planimeter Reading) _____

⑥ Population of City Within Radius [⑤ × ③] _____

⑦ House Count Within Radius, Outside City _____

⑧ Population From House Count [⑦ × ④] _____

⑨ Total Population Within Radius [⑥ + ⑧] _____

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
				16.23	
				7,334.29	
				7,334.29	

ERROR CHECK:

⑩ Area of City Outside 4 miles _____

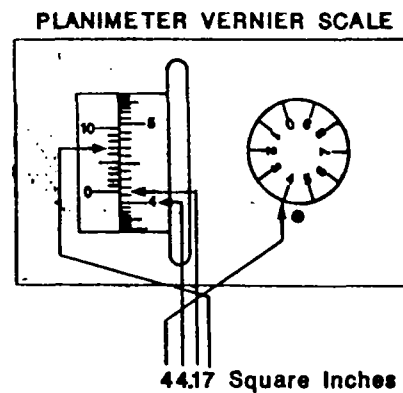
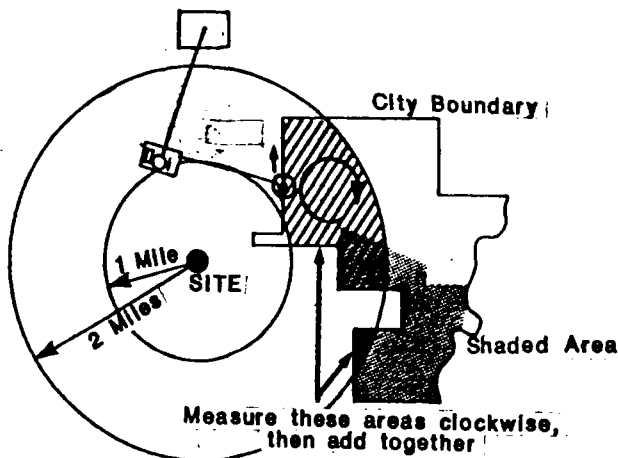
_____ Square Inches

⑪ Population of City Outside of 4 miles [⑩ × ③] _____

_____ People

⑫ Population of City [⑨ + ⑪] _____

_____ People 7 ⑪



Cincinnati, Ohio.

385,457 People

Year 1980

548.26 Square Inches

703.06 People per Square Inch

Year _____

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			2,102	14.95	32.06
			1,420.17	10,510.67	22,539.95
			1,420.17	10,510.67	22,539.95

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			2,102	14.95	32.06
			1,420.17	10,510.67	22,539.95
			1,420.17	10,510.67	22,539.95

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			2,102	14.95	32.06
			1,420.17	10,510.67	22,539.95
			1,420.17	10,510.67	22,539.95

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			2,102	14.95	32.06
			1,420.17	10,510.67	22,539.95
			1,420.17	10,510.67	22,539.95

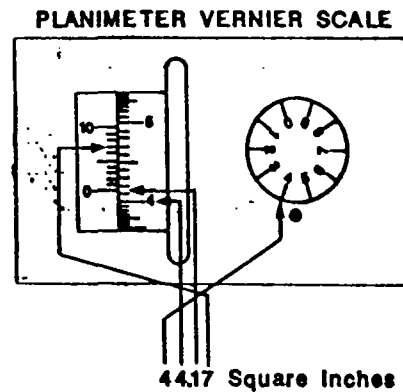
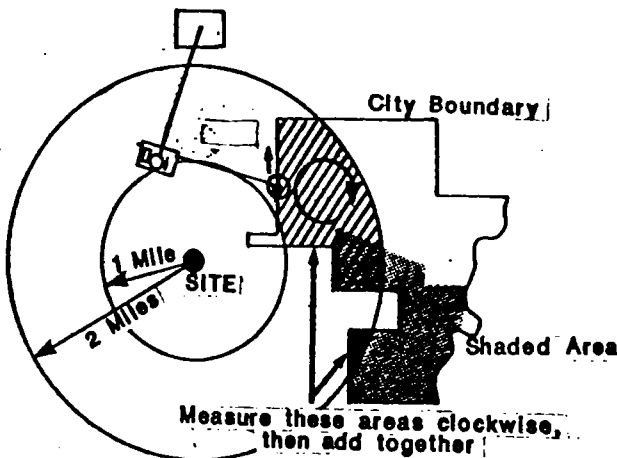
1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			2,102	14.95	32.06
			1,420.17	10,510.67	22,539.95
			1,420.17	10,510.67	22,539.95

0-2 mile = $\frac{11,930.84}{2} = 5,965.42$
 0-3 mile = 11,930.84
 0-4 mile = 34,470.79

Square Inches

People

 People = ? [1]



POPULATION CALCULATION SHEET

Golf MANOR, GA

1 Population of City (or Other Municipality)

4,317 People

Year 1980

2 Area of City (Planimeter Reading)

4.87 Square Inches

3 Population Density [1 + 2]

886.45 People per Square Inch

4 Average Persons per House (Census)

Year _____

5 Area of City Within Radius (Planimeter Reading)

6 Population of City Within Radius [5 x 3]

7 House Count Within Radius, Outside City

8 Population From House Count [7 x 4]

9 Total Population Within Radius [6 + 8]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
				1.24	3.63
				1,099.20	3,217.81
				1,099.20	3,217.81

ERROR CHECK:

10 Area of City Outside 4 miles

_____ Square Inches

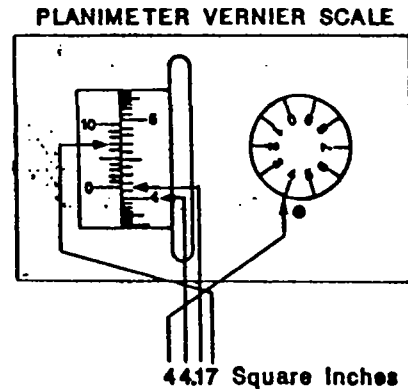
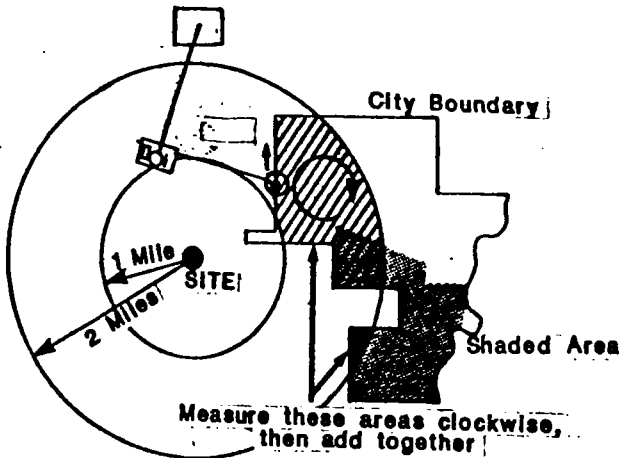
11 Population of City Outside of 4 miles [10 x 3]

_____ People

12 Population of City [9 + 11]

_____ People $\frac{1}{1}$

0-3 mile = 7
0-4 mile = total = 4,317.



POPULATION CALCULATION SHEET

AMBERLEY, OH

1 Population of City (or Other Municipality)

3,442 People

Year 1980

2 Area of City (Planimeter Reading)

23.79 Square Inches

3 Population Density [1 + 2]

144.68 People per Square Inch

4 Average Persons per House (Census)

Year _____

5 Area of City Within Radius (Planimeter Reading)

6 Population of City Within Radius [5 x 3]

7 House Count Within Radius, Outside City

8 Population From House Count [7 x 4]

9 Total Population Within Radius [6 + 8]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			8.49	15.7	0.13
			1,228.33	2,194.80	18.81
			1,228.33	2,194.80	18.81

ERROR CHECK:

10 Area of City Outside 4 miles

_____ Square Inches

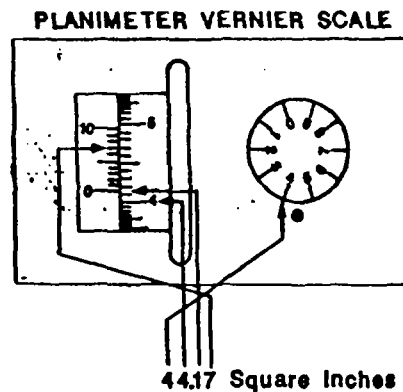
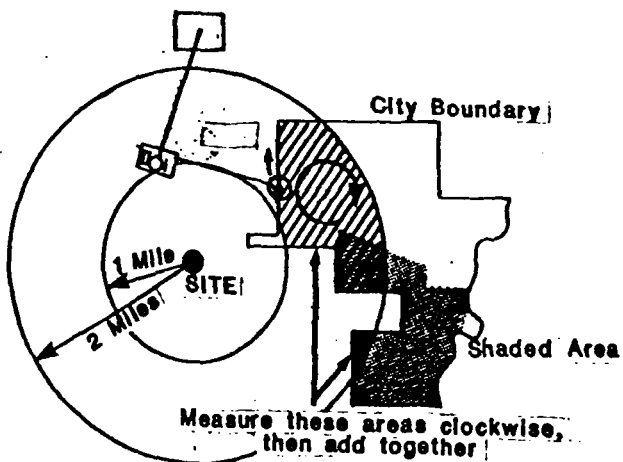
11 Population of City Outside of 4 miles [10 x 3]

_____ People

12 Population of City [9 + 11]

_____ People 3,442

0-2 mile = 9
0-3 mile 3423.13
0-4 mile = 3441.94



POPULATION CALCULATION SHEET

SILVERTON, OH

① Population of City (or Other Municipality)

6,172 People

Year 1980

② Area of City (Planimeter Reading)

6.71 Square Inches

③ Population Density [① ÷ ②]

919.82 People per Square Inch

④ Average Persons per House (Census)

Year _____

⑤ Area of City Within Radius (Planimeter Reading)

⑥ Population of City Within Radius [⑤ x ③]

⑦ House Count Within Radius, Outside City

⑧ Population From House Count [⑦ x ④]

⑨ Total Population Within Radius [⑥ + ⑧]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
				0.65	4.66
				597.88	4,286.32
				597.88	4,286.32

ERROR CHECK:

⑩ Area of City Outside 4 miles

_____ Square Inches

⑪ Population of City Outside of 4 miles [⑩ x ③]

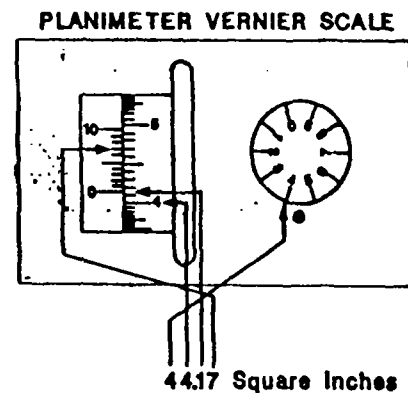
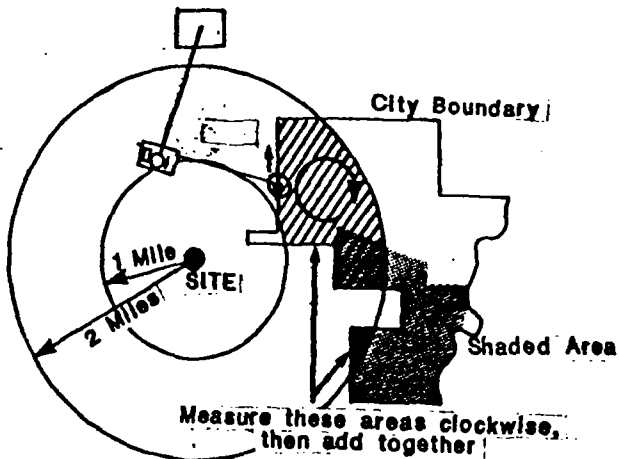
_____ People

⑫ Population of City [⑨ + ⑪]

_____ People ? ⑫

0-3 mile = 2

0-4 mile = 4,884.25



POPULATION CALCULATION SHEET

DEER PARK

① Population of City (or Other Municipality)

6,745 People

Year 1980

② Area of City (Planimeter Reading)

5.84 Square Inches

③ Population Density [① ÷ ②]

1,154.97 People per Square Inch

④ Average Persons per House (Census)

Year _____

⑤ Area of City Within Radius (Planimeter Reading)

⑥ Population of City Within Radius [⑤ × ③]

⑦ House Count Within Radius, Outside City

⑧ Population From House Count [⑦ × ④]

⑨ Total Population Within Radius [⑥ + ⑧]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
				3.29	2.55
				3,799.85	2,945.15
				3,799.85	2,945.15

ERROR CHECK:

⑩ Area of City Outside 4 miles

_____ Square Inches

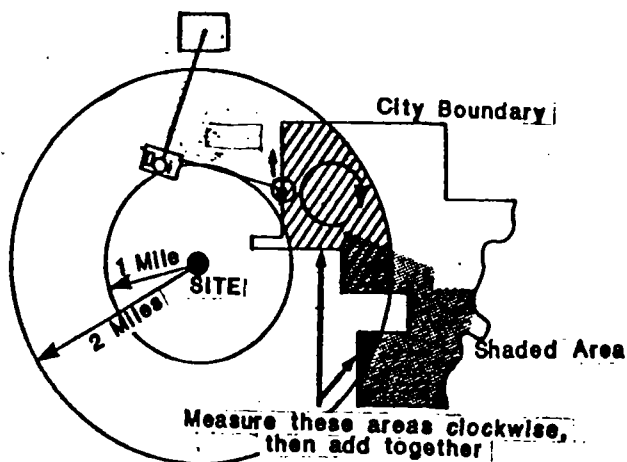
⑪ Population of City Outside of 4 miles [⑩ × ③]

_____ People

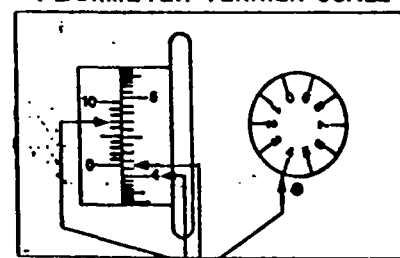
⑫ Population of City [∑ ⑥ + ⑪]

_____ People 11

0-3 mile ↗
0-4 mile = total



PLANIMETER VERNIER SCALE



44.17 Square Inches

POPULATION CALCULATION SHEET

KENWOOD University
(part of
Sycamore
& Township)

① Population of City (or Other Municipality)

9,728 People

Year 1980

② Area of City (Planimeter Reading)

31.07 Square Inches

③ Population Density [① ÷ ②]

313.10 People per Square Inch

④ Average Persons per House (Census)

Year _____

⑤ Area of City Within Radius (Planimeter Reading)

⑥ Population of City Within Radius [⑤ × ③]

⑦ House Count Within Radius, Outside City

⑧ Population From House Count [⑦ × ④]

⑨ Total Population Within Radius [⑥ + ⑧]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			1.90	6.98	12.20
			594.89	2,185.43	3,819.81
			594.89	2,185.43	3,819.81

ERROR CHECK:

⑩ Area of City Outside 4 miles

_____ Square Inches

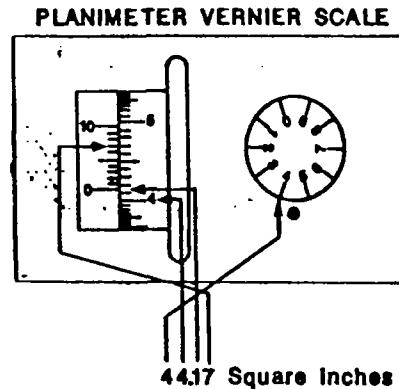
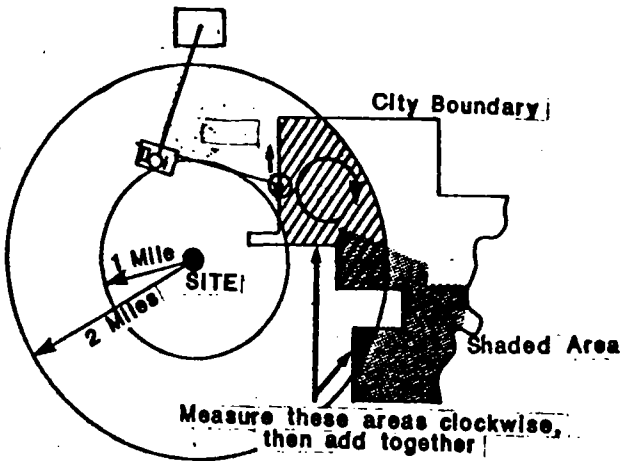
⑪ Population of City Outside of 4 miles [⑩ × ③]

_____ People

⑫ Population of City [⑨ + ⑪]

_____ People 711

0-2 mile = 1.90
0-3 mile = 2,185.43
0-4 mile = 3,819.81



POPULATION CALCULATION SHEET

Blue Ash

① Population of City (or Other Municipality) 9,506 People Year 1980

② Area of City (Planimeter Reading) 55.32 Square Inches

③ Population Density [① ÷ ②] 171.84 People per Square Inch

④ Average Persons per House (Census) _____ Year _____

⑤ Area of City Within Radius (Planimeter Reading)

⑥ Population of City Within Radius [⑤ × ③]

⑦ House Count Within Radius, Outside City

⑧ Population From House Count [⑦ × ④]

⑨ Total Population Within Radius [⑥ + ⑧]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			6.71	14.74	20.58
			1,153.05	2,532.92	3,536.47
			1,153.05	2,532.92	3,536.47

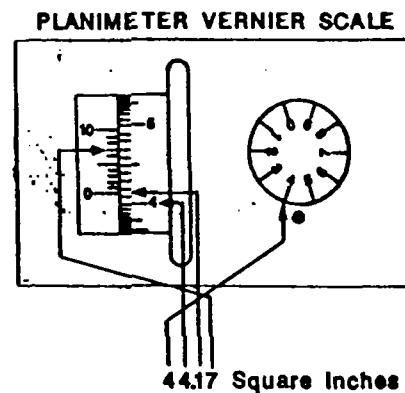
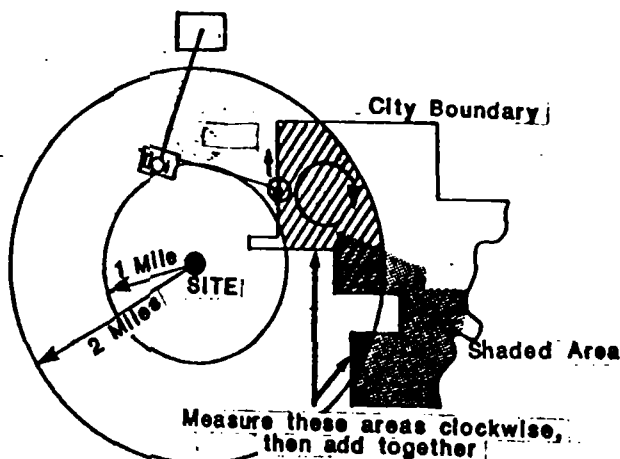
ERROR CHECK:

⑩ Area of City Outside 4 miles

⑪ Population of City Outside of 4 miles [⑩ × ③] _____ People

⑫ Population of City [⑨ + ⑪] _____ People 9,506

0-1 = 0
0-2 miles = 71
0-3 miles = 3,685.97
0-4 miles = 7,222.44



POPULATION CALCULATION SHEET

Evendale

1 Population of City (or Other Municipality) 1,954 People Year 1980

2 Area of City (Planimeter Reading) 33.06 Square Inches

3 Population Density [1] ÷ [2] 59.10 People per Square Inch

4 Average Persons per House (Census) _____ Year _____

5 Area of City Within Radius (Planimeter Reading)

6 Population of City Within Radius [5] x [3]

7 House Count Within Radius, Outside City

8 Population From House Count [7] x [4]

9 Total Population Within Radius [6] + [8]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
		9.39	18.05	5.62	
		554.99	1,066.84	332.17	
		554.99	1,066.84	332.17	

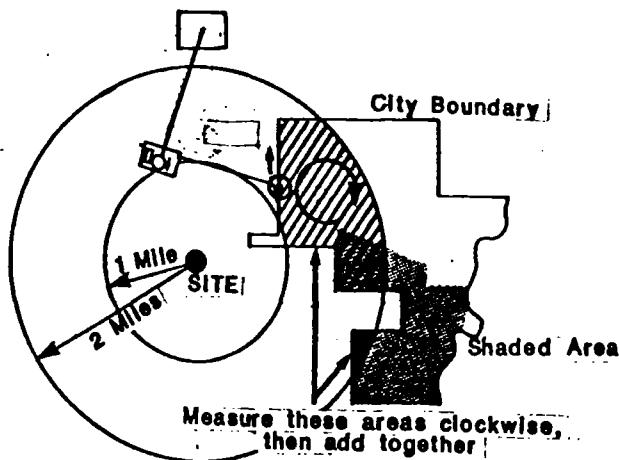
ERROR CHECK:

10 Area of City Outside 4 miles _____ Square Inches

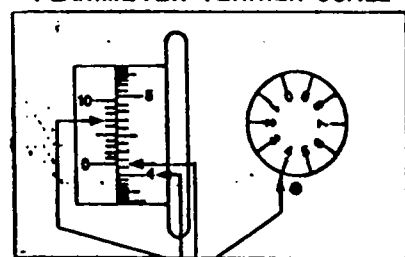
11 Population of City Outside of 4 miles [10] x [3] _____ People

12 Population of City [9] + [11] _____ People 1,954

0-1 mile 9.39
0-2 mi 1,621.83 + 954
0-3 mile = total = 1,954



PLANIMETER VERNIER SCALE



44.17 Square Inches

POPULATION CALCULATION SHEET

Sharonville

① Population of City (or Other Municipality) 10,108 People Year 1980

② Area of City (Planimeter Reading) 39.48 Square Inches

③ Population Density [① ÷ ②] 256.03 People per Square Inch

④ Average Persons per House (Census) _____ Year _____

⑤ Area of City Within Radius (Planimeter Reading)

⑥ Population of City Within Radius [⑤ x ③]

⑦ House Count Within Radius, Outside City

⑧ Population From House Count [⑦ x ④]

⑨ Total Population Within Radius [⑥ + ⑧]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
				16.24	20.23
				4,157.90	5,179.45
				4,157.90	5,179.45

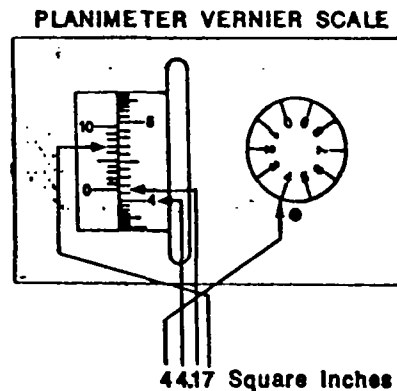
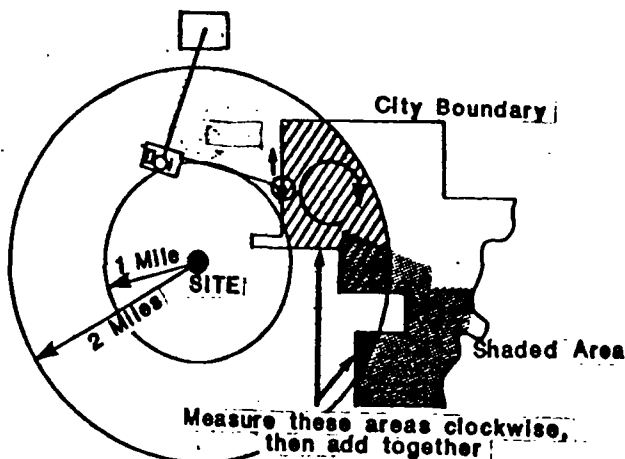
ERROR CHECK:

⑩ Area of City Outside 4 miles _____ Square Inches

⑪ Population of City Outside of 4 miles [⑩ x ③] _____ People

⑫ Population of City [⑨ + ⑪] _____ People 2 ⑫

*2-3 mile
or 0-3
5-4 mile = 9,337.35*



POPULATION CALCULATION SHEET

Glendale

1 Population of City (or Other Municipality)

2,368 People

Year 1980

2 Area of City (Planimeter Reading)

11.58 Square Inches

3 Population Density [1 + 2]

204.49 People per Square Inch

4 Average Persons per House (Census)

Year _____

5 Area of City Within Radius (Planimeter Reading)

6 Population of City Within Radius [5 x 3]

7 House Count Within Radius, Outside City

8 Population From House Count [7 x 4]

9 Total Population Within Radius [6 + 8]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			0.70	8.19	
			143.14	1,674.77	
			143.14	1,674.77	

ERROR CHECK:

10 Area of City Outside 4 miles

_____ Square Inches

11 Population of City Outside of 4 miles [10 x 3]

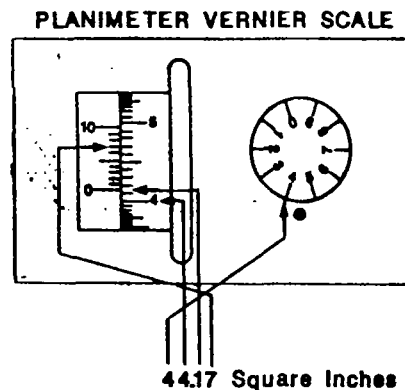
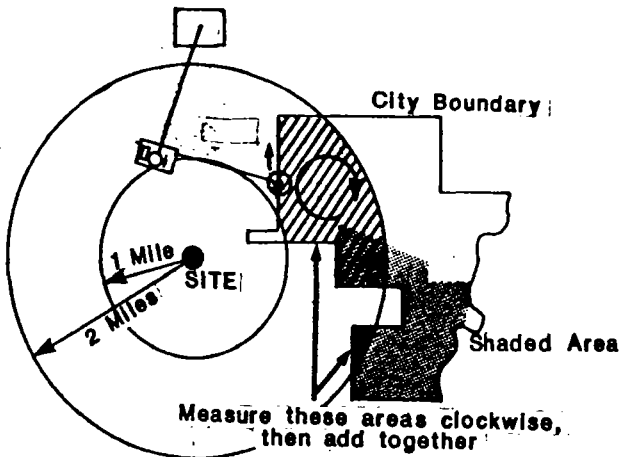
_____ People

12 Population of City [9 + 11]

_____ People $\frac{2}{1}$

0-2 mi
0-3 mi = 1817.91

0-4 mi = total = 2,368



POPULATION CALCULATION SHEET

Woodlawn

1 Population of City (or Other Municipality)

2,715 People

Year 1980

2 Area of City (Planimeter Reading)

17.65 Square Inches

3 Population Density [1] ÷ [2]

153.82 People per Square Inch

4 Average Persons per House (Census)

Year

5 Area of City Within Radius (Planimeter Reading)

6 Population of City Within Radius [5] x [3]

7 House Count Within Radius, Outside City

8 Population From House Count [7] x [4]

9 Total Population Within Radius [6] + [8]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			6.03	10.97	
			927.53	1,687.41	
			927.53	1,687.41	

ERROR CHECK:

10 Area of City Outside 4 miles

Square Inches

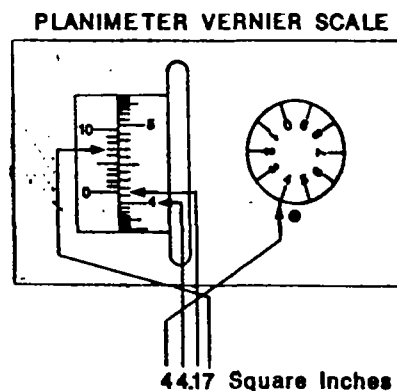
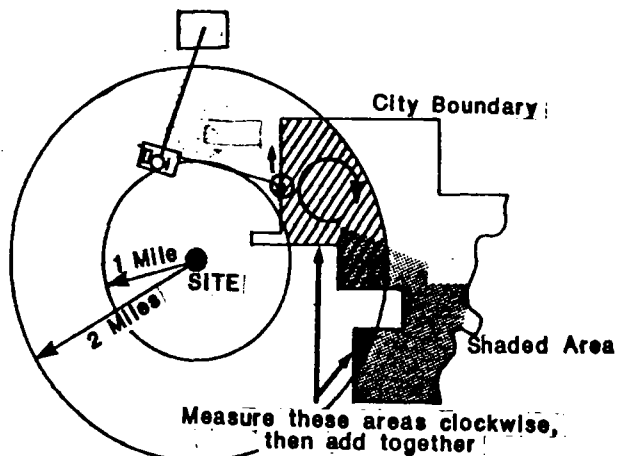
11 Population of City Outside of 4 miles [10] x [3]

People

12 Population of City [9] + [11]

People 2,715

0-2 mile = 6.03
0-1-2 mile = 927.53
0-3 mile = 1,687.41
0-4 mile - total = 2,715



POPULATION CALCULATION SHEET

Springfield Township

1 Population of City (or Other Municipality)

42,024 People

Year 80

2 Area of City (Planimeter Reading)

126.85 Square Inches

3 Population Density [1 + 2]

331.29 People per Square Inch

4 Average Persons per House (Census)

Year

5 Area of City Within Radius (Planimeter Reading)

6 Population of City Within Radius [5 x 3]

7 House Count Within Radius, Outside City

8 Population From House Count [7 x 4]

9 Total Population Within Radius [6 + 8]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			0.28	7.79	
			92.76	2580.75	
			92.76	2,580.75	

ERROR CHECK:

10 Area of City Outside 4 miles

Square Inches

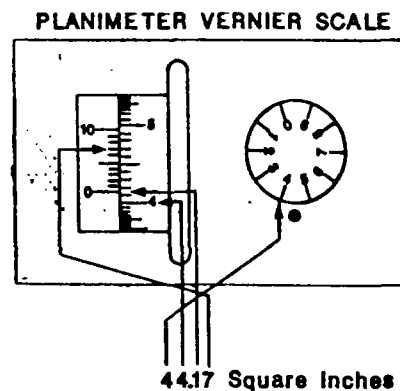
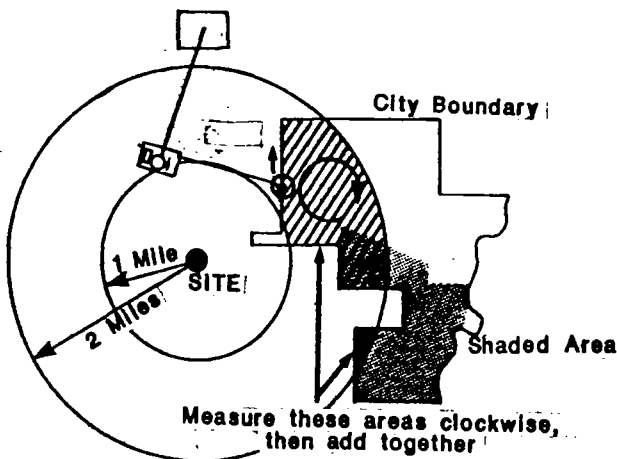
11 Population of City Outside of 4 miles [10 x 3]

People

12 Population of City [9 + 11]

People 21

0-2 miles = 92.76
0-3 miles = 2,673.51



POPULATION CALCULATION SHEET

WYOMING

① Population of City (or Other Municipality)

8,282 People

Year 1980

② Area of City (Planimeter Reading)

18.60 Square Inches

③ Population Density [① ÷ ②]

445.27 People per Square Inch

④ Average Persons per House (Census)

Year _____

⑤ Area of City Within Radius (Planimeter Reading)

⑥ Population of City Within Radius [⑤ x ③]

⑦ House Count Within Radius, Outside City

⑧ Population From House Count [⑦ x ④]

⑨ Total Population Within Radius [⑥ + ⑧]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
			7.08	8.83	2.69
			3152.51	3931.73	1197.78
			3152.51	3931.73	1197.78

ERROR CHECK:

⑩ Area of City Outside 4 miles

_____ Square Inches

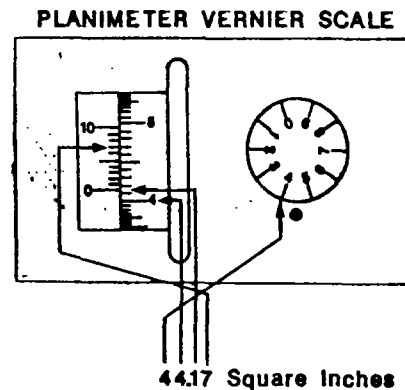
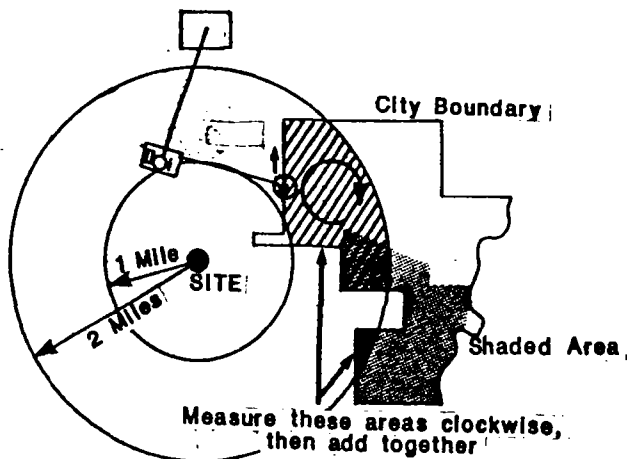
⑪ Population of City Outside of 4 miles [⑩ x ③]

_____ People

⑫ Population of City [⑨ + ⑪]

_____ People 2 ①

0-2 mile →
0-3 mile = 7084.24
0-4 mile = total = 8,282



POPULATION CALCULATION SHEET

Lincoln Hts

1 Population of City (or Other Municipality)

5,259 People

Year _____

2 Area of City (Planimeter Reading)

5.16 Square Inches

3 Population Density [1 ÷ 2]

1019.19 People per Square Inch

4 Average Persons per House (Census)

Year _____

5 Area of City Within Radius (Planimeter Reading)

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
		2.08	3.08		
		2,119.92	3,139.11		
		2,119.92	3,139.11		

6 Population of City Within Radius [5 x 3]

7 House Count Within Radius, Outside City

8 Population From House Count [7 x 4]

9 Total Population Within Radius [6 + 8]

ERROR CHECK:

0-1 mile = 2,119.92

0-2 mile = total = 5,259

10 Area of City Outside 4 miles

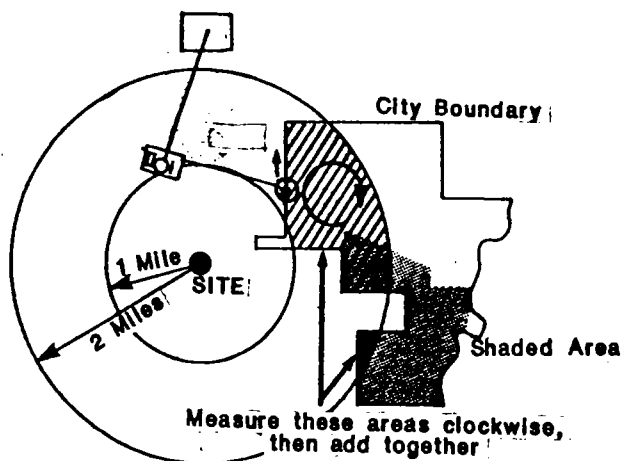
_____ Square Inches

11 Population of City Outside of 4 miles [10 x 3]

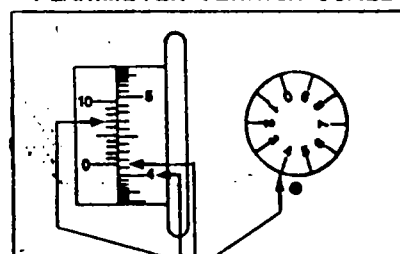
_____ People

12 Population of City [Σ 9 + 11]

_____ People 2 1



PLANIMETER VERNIER SCALE



44.17 Square Inches

POPULATION CALCULATION SHEET

LOCKLAND

① Population of City (or Other Municipality) 4,292 People Year 80

② Area of City (Planimeter Reading) 8.37 Square Inches

③ Population Density [① ÷ ②] 512.78 People per Square Inch

④ Average Persons per House (Census) _____ Year _____

⑤ Area of City Within Radius (Planimeter Reading)

⑥ Population of City Within Radius [⑤ × ③]

⑦ House Count Within Radius, Outside City

⑧ Population From House Count [⑦ × ④]

⑨ Total Population Within Radius [⑥ + ⑧]

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
		4.02	4.35		
		2061.38	2230.59		
		2061.38	2230.59		

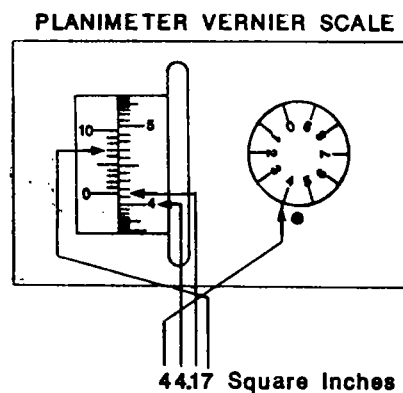
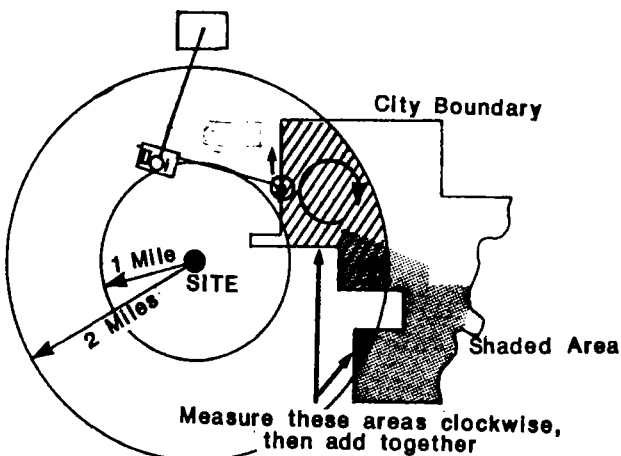
ERROR CHECK:

1 mile →
2 mile = total = 4,292

⑩ Area of City Outside 4 miles _____ Square Inches

⑪ Population of City Outside of 4 miles [⑩ × ③] _____ People

⑫ Population of City [∑ ⑨ + ⑪] _____ People = ⑫



POPULATION CALCULATION SHEET

READING

① Population of City (or Other Municipality)

12,843 People

Year 80

② Area of City (Planimeter Reading)

20.21 Square Inches

③ Population Density [① ÷ ②]

635.48 People per Square Inch

④ Average Persons per House (Census)

_____ Year _____

⑤ Area of City Within Radius (Planimeter Reading)

1/4 mile	1/2 mile	1 mile	2 mile	3 mile	4 mile
		11.61	8.42	0.17	
		7,377.89	5,350.72	108.03	
		7,377.89	5,350.72	108.03	

⑥ Population of City Within Radius [⑤ x ③]

⑦ House Count Within Radius, Outside City

⑧ Population From House Count [⑦ x ④]

⑨ Total Population Within Radius [⑥ + ⑧]

ERROR CHECK:

⑩ Area of City Outside 4 miles

_____ Square Inches

2 mile = 12,728.61

3 mile = 12,836.64

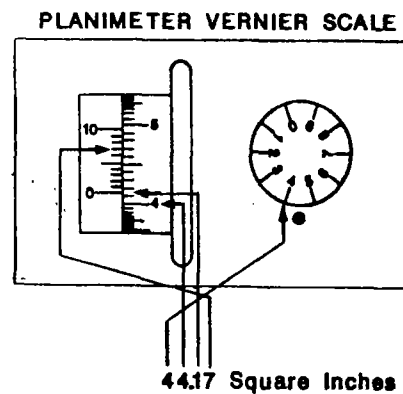
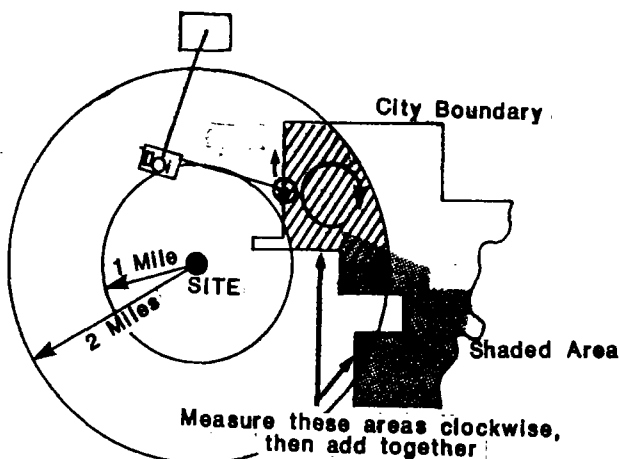
⑪ Population of City Outside of 4 miles [⑩ x ③]

_____ People

0.05 % error

⑫ Population of City [∑ ⑥ + ⑪]

_____ People 2 ①



44.17 Square Inches